POWER PLAY SOLUTIONS™

Protection for an AC Power Supply in a Mobile Transceiver Base Station

Complies with UL 1449 Type 4 Solutions for Type 2 Locations

Solution Products

1250-1S-230

1250-4S-230

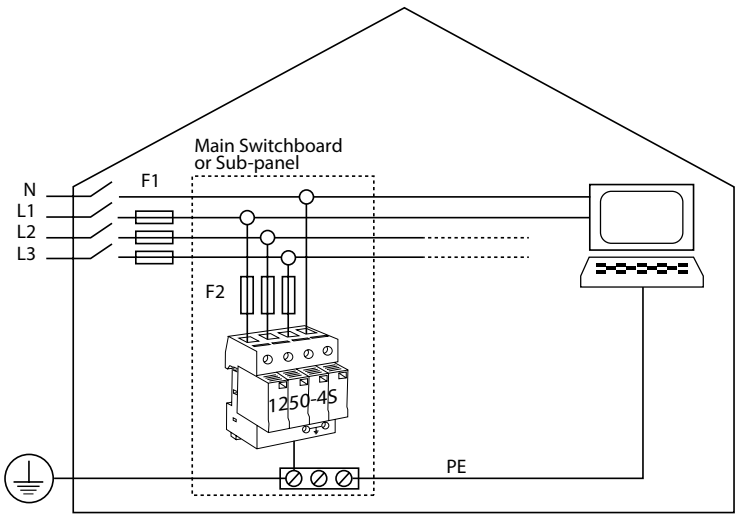
Situation

Telecom power supplies are typically powered by 48 VDC, but there is a growing trend where Base Transceiver Station (BTS) equipment is powered by 110/220 VAC. While it is highly recommended that all electrical ports have some sort of protection, most 48 VDC power supplies will have limited protection on the AC line. In such cases, AC ports provide vital BTS communication connections and should have effective surge protection, especially if the equipment is located in remote or harsh environments.

This Bourns® Power Play Solution™ presents the power protection scheme for the AC input to a mobile transceiver power supply system. It will present the advantages of using Surge Protection Devices (SPDs) that are listed under UL 1449 as Type 4 solutions for use in Type 2 locations. It outlines a Bourns SPD solution that features a 20 kA nominal surge current rating and 50 kA maximum surge rating that meets BTS equipment as well as multiple power supply vendors' front end protection requirements.

Bourns® Power Play Solution™

The circuit shown below illustrates Bourns' optimized AC power protection solution utilizing Bourns® Model 1250-xS-230 series products.



**The Bourns® Model 1250-1S-230 and 1250-4S-230 Surge Protective Devices are listed under UL1449 as Type 4 for use in Type 2 locations.*

The schematic shown here illustrates the application protection and does not constitute the complete circuit design. Customers should verify actual device performance in their specific applications.

RoHS Directive 2015/863, Mar 31, 2015 and Annex.

Qty.	Component Description	Part Number & Data Sheet Link	Distributor Inventory
1	AC Surge Protective Device	1250-1S-230	Check Stock
		1250-2S-230	Check Stock
		1250-3S-230	Check Stock
		1250-4S-230	Check Stock

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Summary

Industry: Mobile Telecommunications

Application: AC Power Supply

Product: Bourns® Model 1250 Surge Protection Device (SPD)

Benefits: Proven, easy to install and economical protection solution

Compliance

Bourns® Model 1250 SPD is UL recognized, and this Power Play Solution™ meets National Electric Code (NEC) and UL 1449 Type 4 Nominal Discharge Current and Maximum Limiting Voltage (MLV) requirements.

Benefits

Thanks to its Din-Rail construction, the Bourns® Power Play Solution™ is economical and easy to install while also delivering a high surge rating. Furthermore, this solution has been proven in many existing and similar Bourns' customer deployments.

Bourns® Power Play Solution™

Lightning and AC transient occurrences are known to cause power system degradation. This, in turn, can lead to system failure and downtime that often requires costly maintenance calls. By installing an external protection solution on BTS equipment that is powered by 110/120 VAC, users should only need to repair or replace the protection scheme instead of the much more expensive entire system replacement.

Bourns® Model 1250-xS-230 is a general duty AC SPD that is designed to be installed in a Type 2 location at the front end of the application. It is normally located in the area of the main switchboard and close to sensitive terminals that are not protected with LPS (Lightning Protection Systems; a.k.a., lightning rods). An ideal passive solution to protect 110/120 VAC AC line input to a 48 VDC power supply, the Model 1250-xS-230 SPD provides a 20 kA nominal surge current, a 50 kA maximum discharge current and a 1 kV Voltage Protection Rating (VPR). It also offers a 1.25 kV protection level, a 100 kA UL short-circuit current rating, rated temperature from -50 °C to +85 °C and has a UL 60691 compliant thermal disconnect feature that can significantly reduce failure risk.

Additional Resources

The following related resources are also available from Bourns:

- Bourns® AC SPD Product Offering
- Bourns® SPD Technical Library
- Training Video: 1202 Series Type 1 Hybrid Surge Protective Device
- Bourns® Power Play Solution™: Universal AC Power (UACP) Protection

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